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Dell to move into the high street

Computer buyers in the UK will soon be able to do something that was almost unthinkable until recently: stroll into a retail outlet and buy a Dell PC. If that isn't surprising enough, they will even be able to choose one with the Linux operating system pre-installed.

Dell, which made its name by selling direct to customers, has announced that it will make its PCs available through retail outlets, starting in the US with Wal-Mart.

Dell US has also begun offering Ubuntu Linux 7.04 as an alternative to Microsoft Windows on three of its consumer models, the XPS 410n and Dimension E520n desktops and the Inspiron E1505n notebook. Dell UK will follow both the move into retail and the Linux option later this year.

Dell's change of direction is due to its declining fortunes. The company has lost out to HP in the consumer market, because it has no retail presence. When founder Michael Dell returned to his role as company CEO he set up a website (www.ideastorm.com) that asked customers what they wanted from the company. The most common request was for Dell to offer the Linux operating system pre-loaded on the PC instead of Windows.

"The interest and enthusiasm from customers who challenged us to deliver a consumer Linux solution have been matched within Dell and Canonical, the sponsor of Ubuntu, by a team of dedicated professionals who made this happen in a phenomenally short period of time," said Neil Hand, vice-president of the Dell Consumer Product Group. "It's fantastic to be able to offer what many Linux enthusiasts want: great Dell products with popular open-source software."

The company claims that because there are no software licensing costs associated with Ubuntu, the starting price for each system is lower. For example, the

XPS 410 configured with Windows costs \$50 (around £25) more than the XPS 410n with Ubuntu Linux.

Dell is not the first company to try and sell Linux PCs to consumers. However, demand for Linux has been small. The company tried selling Linux PCs to businesses in 1999 but cancelled the line in 2001 because there was not enough demand for them. However, the response of Dell's customers on Ideastorm suggests that it may be more successful this time.

Ubuntu Linux comes with a reasonable GUI and there are an increasing number of useful free applications available for the platform, including the OpenOffice office suite, the GIMP image editor, RealPlayer, Acrobat Reader, Flash, Skype and a good selection of email, instant messaging and web browser applications. For around \$40 (£20), Codeweavers' Crossover Linux package makes it possible to run Windows applications such as Office, Photoshop and iTunes on a Linux system. "Linux has evolved to a point where there is something available for consumers," said a Dell spokesman.



▲ Dell's PCs are to be sold through the huge Wal-Mart chain in the US, and UK stores will follow later this year

Microsoft issues warning to open-source movement

Microsoft has warned the open-source community that 235 of its patents are being infringed illegally by software including Linux, the Apache Web Server and OpenOffice.org. Although Microsoft subsequently said it was not intending to sue either open-source developers or customers using open-source software, its actions are being viewed with alarm by some developers.

One possibility is that Microsoft will browbeat open source developers into signing licensing deals in which they have to pay royalties. This would effectively finish the concept of free open-source software.

Microsoft's head of intellectual property and licensing, Horacio Gutierrez, claimed that the company had already approached

some corporate Linux users and persuaded them to sign licensing deals and pay royalties. Microsoft's director of platform strategy Bill Hilf recently told the *Bangkok Post* that "the Free Software movement is dead," although he later claimed he had been quoted out of context.

Mark Shuttleworth, who founded the Ubuntu distribution of Linux, warned that Microsoft "will lose a patent trench war if they start one... I'm pretty sure that cooler heads in Redmond know that," he wrote in a blog.

He predicts that Microsoft will ultimately find that patent law works against its interests. "I'm pretty certain that, within a few years, Microsoft themselves will be strong advocates against software patents. Why? Because Microsoft is irrevocably committed to

shipping new software every year, and software patents represent landmines in their roadmap which they are going to step on, like it or not, with increasing regularity. Every time [they] ship new products, they risk stepping on a patent landmine," he wrote.

"They are a perfect target – they have deep pockets, and they have no option but to negotiate a settlement, or go to court, when confronted with a patent suit," he observed.

Linux creator Linus Torvalds agreed that Microsoft could have more to lose than gain from patent law. "Basic operating system theory was pretty much done by the end of the 1960s. It's certainly a lot more likely that Microsoft violates patents than Linux does," Torvalds said.



Google establishes its own internet security group

Google has unveiled a dedicated internet security division, which will analyse dangers on the web. The anti-malware team has already started a blog at <http://googleonlinesecurity.blogspot.com> and has published some interesting technical research already.

Some believe that the company had secretly established the group a year ago and speculate that Google plans to offer anti-malware products to compete with companies such as Symantec and McAfee. Google already offers Norton Security Scan and Spyware Doctor Starter Edition (both free, cut-down products) with the Google Pack of software.

Industry watchers expect these to be replaced with its own products, either in the form of application downloads or some kind of online service. Google already warns its search engine users when certain webpages may not be safe to visit. The warning appears in the list of search results, although the user may choose to ignore them and click through to the potentially dangerous site.

The fact that the company's core online advertising business would benefit from less malware is one reason why operating in the security software market could be appealing to Google. One of the most serious threats to the company's AdSense business is click fraud, which is often perpetuated by spyware and botnets.

By contrast, traditional security companies base their whole business on selling software to people who are worried about threats such as viruses, spyware and

keyloggers. As a result, they are often accused of overhyping the threat.

Google estimates that around 0.1 per cent of all webpages contain potentially malicious code. In its report *The Ghost in the Browser*, Google said it had checked billions of web addresses to determine the frequency of malicious code being encountered by users. Google investigated what it determined were 12 million suspicious URLs and found "about one million that engage in drive-by downloads".

Drive-by downloads work by installing software automatically on a visitor's system without the user realising. Google's report warned that, in many cases, users were helpless to counter the malware lurking on a webpage. "Their browser can be compromised just by visiting a page and become the vehicle for installing multitudes of malware on their systems," it warned.

The most commonly infected sites were ones containing adverts, user-generated content such as blogs and forums, and those that use free software such as traffic counters.

"We expect that the majority of malware is now spreading via web-based infection, because the computer of an average user provides a rich environment for adversaries to mine," wrote Google's study leader, Niels Provos. "Banking transactions and credit card numbers, for instance, are much more likely to be found on a user's machine than on a compromised server."

Developers must do better, says Intel

PC software needs a fundamental redesign if users are to benefit from future generations of multicore processors. That's the warning from Intel fellow Shekhar Borkar, in a blog entry entitled, "Will software follow or even save Moore's Law?"

Although processor power has doubled between every 18 and 24 months, as predicted by Intel co-founder Gordon Moore in 1965, "software has not kept up" wrote Borkar.

In the future the situation will get even worse, because most PC software is designed for single-core processors. Borkar believes that the software industry is not facing up to the fact that it needs to fundamentally rethink its approach. Software developers have been used to writing programs that take advantage of ever faster single-core processors. However, power requirements and heat emission issues have forced chip-makers to increase processing power by adding more processing cores. Intel already sells eight-core Xeon processors, and Moore's Law suggests that 16-core chips will appear in less than two years.

"Welcome to the era of the multicore processor, and we are now at the mercy of the software [industry] to use it effectively. Software, too, now has to follow Moore's Law," he wrote.

Microsoft's chief research and strategy officer, Craig Mundie, acknowledged that developers have a mountain to climb. Speaking at the Windows Hardware Engineering Conference, he said that writing new software for processors with many cores "is probably the single most disruptive thing that we will have done in the last 20 or 30 years".

Microsoft is already planning ahead. Speaking at the Future In Review conference, Microsoft's director of technical strategy Ty Carlson told delegates that Microsoft accepted that "Windows will be fundamentally changed" to cope with "computer platforms with 8, 16 and 64 processors and beyond".

Digital divide is no more, says Ofcom

Broadband uptake has risen dramatically in the UK, and the so-called digital divide has disappeared between the various regions of the country, according to research by industry regulator Ofcom.

In England, 45 per cent of households had a broadband connection by the end of 2006, up from 36 per cent in 2005. Broadband was available in 42 per cent of homes in Northern Ireland, Wales and Scotland at the end of 2006, which was up from 24 per cent, 25 per cent and 31 per cent respectively from the previous year. This marks a significant closing of the gap between the four nations.

The spread of local loop unbundling (LLU), in which customers can benefit from competition between broadband suppliers, was also impressive. By the end of 2006 it was available to 67 per cent of UK households, compared to just 40 per cent a year earlier.

Computer owners in the countryside had lagged behind badly due to the poor availability of broadband, but Ofcom found that around 40 per cent of UK households in rural areas had broadband at the end of last year, compared to 45 per cent in the cities.

IN BRIEF

NEW WIRELESS REGS TO HELP RURAL BRITAIN

Ofcom has introduced new rules to extend wireless broadband access across the country, with potentially significant benefits for rural areas. The new rules will allow operators to increase power levels, potentially extending the range and variety of services into parts of the country that were previously not covered.

The regulations cover the 5.8GHz band, currently used by a number of operators to provide fixed wireless broadband services. Following a period of consultation, Ofcom has decided to increase the maximum power limit from 2W to 4W in all geographic areas.

MICROSOFT AND SANDISK PREPARE WINDOWS TAKEAWAY

Microsoft has signed an agreement with SanDisk to deliver software for securely storing and moving customised computing environments, including data, applications and preferences using USB flash drives and flash memory cards.

The software will be developed in conjunction with new hardware from SanDisk, expanding on its existing U3 Smart Technology. U3 USB drives let users carry applications with their associated preferences and settings, as well as data. The new offering will be designed so that users can store their personal computing environment, including a customised user interface, applications and data, in an encrypted format that will be then be accessible on any Windows XP or Vista PC.

UNAUTHORISED DOWNLOADS DROP

Unauthorised downloading of copyrighted works has fallen by 24 per cent over the past three years – and parents can take the credit, according to a survey by the Business Software Alliance.

The survey found that 36 per cent of US children between the ages of eight and 18 downloaded software, music, movies or games without paying for it. In 2004, the figure was 60 per cent. The participants said that parental oversight is the key factor in the change to their online behaviour.

While around half of those whose parents do not impose restrictions download software and music, just 19 per cent do so where rules are set.

IN BRIEF

» 'SPAM KING' ARRESTED

One of the internet's most notorious spammers is being held in custody after becoming the first man to be charged under new US anti-spam laws. Robert Alan Soloway, 27, has been dubbed the 'Spam King' by federal prosecutors for allegedly sending hundreds of millions of spam emails via hijacked networks.

Soloway was indicted by a federal grand jury on 35 counts that include mail fraud, wire fraud, fraud in connection with email, aggravated identity theft and money laundering.

Users may not notice an immediate change in the amount of spam they receive because there are other even more prolific spammers currently operating. However, the long-term effect of the arrest could be significant.

» MICROSOFT LIVE SEARCH BOOKS SIGNS UP PUBLISHERS

Microsoft has announced a major expansion of its Live Search Books feature. Dozens of major publishers have agreed to allow Microsoft to make their titles available, the company said.

It hopes the new content will enable it to grab some of the book search market that Google pioneered when it unveiled its Print service in 2004, which has since been renamed Google Book Search. Microsoft launched its book search in December 2006 as part of the 'Live' makeover of its online services.

» GOOGLE WEB APPS TO WORK OFFLINE

Google has created web-based software that can run both from the internet and offline. This means users can use the applications when disconnected, such as when travelling or when their ADSL line breaks down.

The technology, called Google Gears, allows users to access personal information organisers, email programs and even word processors using PCs, phones and other devices, whether online, intermittently connected to the web or completely offline.

Google plans to make Google Gears freely available so that programmers can create their own hybrid offline/online products. Currently the only available program is Google Reader, which allows users to track updates to their favourite sites.

MP3 voucher site shut down

The music industry has struck another blow against maverick Russian music download site, Allofmp3.com. A UK police raid has closed down an operation that sold vouchers for the online service.

At one time Allofmp3.com was the world's second most popular site for downloading music, beaten to the number one spot by iTunes. Its success was chiefly down to offering songs for just a few pence.

A 25-year-old East London man stands accused of selling vouchers redeemable for downloads from Allofmp3.com. The vouchers were made available on sites such as eBay. He has been arrested and the allofmp3vouchers.co.uk site has been closed down.

The Russian group behind Allofmp3.com is accused of illegally selling cheap downloads of music without its owners' permission and not paying for it. The International Federation of the Phonographic Industry (IFPI), which represents nearly 1,500 record companies in 75 different countries, claims that Allofmp3.com has been able to undercut massively the price for track downloads charged by services such as iTunes.

The IFPI has been successfully persuading credit-card companies and PayPal to withdraw their payment facilities from the Russian company, making it harder for customers to buy songs from its website. The police action triggered by the IFPI under Section 2 of the Fraud Act 2006 was aimed at closing another payment route. The IFPI claims in a statement that, "charging £10 per voucher, the suspect was believed to be taking

payment from European customers and transferring the cash into various offshore accounts operated by the site's Russian owners".

The IFPI also said that the UK action followed legal actions it has taken against Allofmp3.com in Russia, the US, France, Germany, Italy and Denmark, all of which have enjoyed varying degrees of success. It claims that Allofmp3.com's website is much less popular than before and is "now rated outside the top 2,000 websites, according to the net ratings website alexa.com".

"Allofmp3.com is illegal in Russia, the US, the UK and everywhere else in the world," said IFPI chairman, John Kennedy. "The action announced today is the latest to highlight Allofmp3.com's long and undistinguished history of stealing music from artists, composers and record producers and selling it at a profit," he added.

Allofmp3.com has posted a long Q&A document on its site that denies it is operating illegally under Russian law, or that it does not pay artists for the music it sells. In a statement it also denied any connection to the person arrested in London.

"The members of the IFPI are unable to do anything about the natural crisis the music industry faces in the digital era," the statement said. "Instead they engage in unfair competition practices and political lobbying. They make up 'sensational' news to attract public attention to their activity, which becomes less and less valid every day."



▲ It is becoming increasingly difficult to buy tracks from Allofmp3.com

Cyber attack brings chaos to Estonia

Waves of cyber attacks left the former Soviet republic of Estonia in chaos as government, banking, business and media websites were shut down. The denial-of-service attacks, which Estonia alleged were part of a concerted campaign by Russian security services, are an alarming reminder of how reliant societies have become on a functioning internet.

Estonia is something of an example for the benefits of wholesale adoption of the internet for most forms of human activity. The Estonian government has pioneered the use of web services for its citizens, who can vote, pay taxes and access public services online. Online banking is the norm, and most commerce is conducted in paperless transactions.

Unlike the UK, where government IT projects for the computerisation of services such as the NHS have been dogged by technical problems and giant cost overruns, Estonia was regarded as a success story.

The cyber attacks on the Estonian IT infrastructure are widely believed to have been triggered by the removal of a Soviet war memorial from the centre of Tallinn, the country's capital. So serious were the attacks that Estonia called in computer experts from NATO, as national security was threatened.

Estonia tried to counter the attacks by blocking access to the country's IT backbone to servers based outside its borders. Russian officials have denied any government involvement in the attacks.



▲ Russia has been accused of launching a cyber war

New spyware threat to your personal details

A particularly dangerous piece of new malware has been identified by security experts. A version of a Trojan known as Gozi has stolen thousands of personal details, such as bank account and credit card numbers and passwords, which it sends to a server based in Russia. Gozi works by reading information encrypted in Secure Sockets Layer (SSL) streams.

Don Jackson, a security expert who works at SecureWorks and who discovered both versions of the Trojan, said that the 'enhancements' to Gozi make it particularly difficult to detect and eliminate.

One new feature is a utility that disguises the malware by encrypting and unencrypting the Trojan code. This means that it cannot be easily recognised by anti-virus tools, which identify malware files by their distinctive signatures.

Another new feature is a sophisticated keystroke logger routine, which turns itself on only when the victim visits an online banking site. The new variant of Gozi reportedly infects visitors to social networking sites and community forums.

Intel reveals the world's thinnest notebooks

A prototype design of the world's thinnest laptop has been unveiled by Intel. The company announced the laptop at a developer's conference in April.

The Intel mobile Metro notebook is less than 18mm thick, weighs just 1kg and has a claimed battery life of 14 hours. To achieve these impressive figures, Intel has replaced the hard disk with flash memory storage.

The Metro also features built-in WiFi and WiMAX for wireless networking, as well as the ability to use mobile phone 3G networking, thanks to a new chipset the company will start manufacturing later this year.

The prototype also includes other technologies not generally found on today's laptops, including a fingerprint reader for data security and light sensors that

automatically adjust the display's brightness according to the light levels in the environment. Another interesting feature is the inclusion of a small array of built-in microphones that are designed to filter out background noise for applications such as Skype. Intel has also added a keyboard with luminous characters.

The laptop comes with a leather-styled cover, which attaches itself to the computer using concealed magnets. The cover itself can be plugged into the mains to recharge the laptop. The cover also has an 800x600 pixel monitor, which uses Windows Vista Sideshow to display data without requiring the user to open the laptop. The screen uses hardly any battery power because it uses an E Ink LCD that draws current only when data is being updated.



▲ Intel's Metro laptop includes an 800x600 monitor on its cover

Intel has hinted that a major PC vendor will start producing a laptop based on the design before the end of this year. However, it acknowledged that cost was not a factor in the prototype design.

Intel has a mixed record when it comes to widespread adoption of its reference designs. For example, the Viiv multimedia PC design has not been enthusiastically embraced. However, the decline in the price of flash memory and increasing demand for ultra-portable laptops could mean that the company succeeds this time.

Blogging could get you sacked

A survey has found that 39 per cent of British bloggers have posted details that could be "potentially sensitive or damaging about their place of work, employer or a colleague".

As employers increasingly scan the internet for information on employees, a casual remark in a blog could have serious consequences. "An employee can be lulled into a false sense of security and sound off about his bad day at work on a blog without fully considering the impact such a posting may have," said Gillian Dowling, a technical consultant at UK management consultant Croner, which examined the blogging habits of 2,000 British citizens.

"Confidential secrets could be disclosed, including financial information or new product development, or whistle blowing, all of which could have a negative impact on the business," Dowling said. "If there is a negative impact on the organisation's corporate image which is so serious that it breaches the implied term of mutual trust and confidence, the employee could be dismissed."

The phenomenon is redolent of the early days of email, when people did not seem to understand that unguarded or malicious comments could wreak havoc. "In the 1990s, when emails were introduced as a new means of communication, employees were lulled into a false sense of security by the informality that this type of communication brings," said Dowling.

WiFi is 'threat to children's health'

A BBC *Panorama* documentary has ignited a debate on the potential health dangers of WiFi radiation, especially to children.

The UK is in the throes of a government-led adoption of WiFi hotspots in public places, homes, offices and schools. However, the programme claimed that no serious studies have been conducted on the health effects of living in a sea of WiFi radiation. This radiation is on a similar wavelength to mobile phone signals.

Mobile phones and signal transmission masts have been the subject of many health scares. By contrast, there has been no such debate about WiFi, which is now installed in nearly three-quarters of UK secondary schools and half of primary schools. Children are believed to be more vulnerable to harmful radiation of any kind because their skulls are thinner, and their bodies are still growing.

Panorama claimed that the "height of signal strength" in a Norwich school it tested was "three times higher in the school classroom using WiFi than the main beam of radiation intensity from a mobile phone mast". It acknowledged that the levels of WiFi radiation it detected were "well below the government's safety test – as much as 600 times below," but it cited concerns by scientists that the "whole basis of our safety limits may be wrong".

The programme featured a scientist, Dr Gerd Oberfeld from Salzburg, who says WiFi should be removed from schools. Philip Parkin, general secretary of the Professional Association of Teachers, also said that schools should "consider very seriously whether they should be installing WiFi networks".

However, *Panorama*'s findings were condemned by several top scientists for making basic scientific errors, which led to erroneous conclusions about the levels of WiFi radiation. WiFi travels over far shorter distances and is much less powerful than mobile phone radiation. According to the Health Protection Agency, standing in a WiFi hotspot for a year exposes someone to the same amount of radiation as using a mobile phone for 20 minutes.

Malcolm Sperrin, the director of medical physics at the Royal Berkshire hospital, called the *Panorama* evidence "grossly unscientific". Even the BBC seemed to accept that the *Panorama* programme had enormously overstated any real risk when it published a report after the broadcast.

IN BRIEF

SPAMMERS BLAMED FOR TISCALI EMAIL OUTAGE

Tiscali has blamed spammers for problems that left some of its customers unable to send emails for more than a week. Dozens of angry customers complained about emails not reaching their intended destination towards the end of May.

Only at the very end of the month did the company admit the problem was caused by spammers sending thousands of junk mails from the ISP's accounts, leading other email providers to place Tiscali on spam blacklists.

Several customers on the Tiscali support forum complained that the company was attempting to cover up the problem, but the ISP says it acted as swiftly as possible. "We knew we had some complaints in the forums," said a company spokesman. "Because we weren't seeing any volume in support calls, we were treating them on a [routine] call-by-call basis."

GOOGLE ADWORDS EXPELS ESSAY-WRITING SERVICES

Google has banned adverts for essay-writing services, which are aimed at cash-rich, time-poor students. Following complaints from academic bodies, the search giant is adding the services to its advertising blacklist, which already includes products such as tobacco and firearms.

Specifically, Google's AdWords policy will not allow adverts for sites that promote "academic paper-writing services" or the sale of pre-written essays, theses and dissertations. Google said the company regularly reviews AdWords content policies, and will make changes to keep them "current and effective".

MICROSOFT SCRAPS 32-BIT OPERATING SYSTEMS

Microsoft has announced that Windows Server 2008 will be the last 32-bit system it releases, for servers or clients, as the company makes its way fully into the world of 64-bit computing.

Speaking at the WinHEC 2007 conference in Los Angeles, Microsoft chairman Bill Gates outlined the benefits of 64-bit computing, such as the amount of information that can be processed in one go as a data set and advanced memory technology.

IN BRIEF

» PACEMAKERS
DAMAGED BY IPODS

iPod music players can cause pacemakers to malfunction, according to a study by a high-school student. Seventeen-year-old Jay Thaker demonstrated to a group of specialists how an iPod can interfere with the heart-monitoring equipment.

The study tested the effect of the portable music players on 200 patients fitted with pacemakers. Electrical interference was detected half the time when the iPod was held two inches from the patient's chest for five to 10 seconds. The study did not examine any portable music devices other than iPods. In one case the pacemaker stopped functioning altogether.

» MICROSOFT REVISES
VISTA IPOD PATCH

Microsoft has released a revised version of the Windows Vista patch that enables safe ejecting of iPods. The patch improves compatibility with Windows Vista's Safely Remove Hardware feature and Windows Explorer's Eject command. In some cases, using either method to unmount an iPod could corrupt data on the portable media player.

The patch is available for both 32- and 64-bit versions of Vista from support.microsoft.com/kb/933824/en-us.

Apple's most recent iTunes update addressed several other issues with using iPods alongside Vista. These include compatibility problems with the iTunes Music Store DRM and calendar syncing.

» WIRELESS SECURITY
BLAMED FOR DATA THEFT

Thieves who stole 45 million customer records from TK Maxx last year did so by hacking the clothes retailer's wireless network, according to a report by the *Wall Street Journal*. It says that investigators now believe that the biggest known theft of credit-card numbers in history began two years ago outside a Marshall's clothing store in Minnesota.

Hackers pointed a telescope-shaped antenna at the store and used a laptop to decode data streaming through the air between handheld price-checking devices, cash registers and the store's computers. The data they acquired enabled them to gain access to the central database of Marshall's parent company, TJX, which also owns TK Maxx.

Holographic displays come home

Computer monitors and TVs capable of displaying realistic 3D holographic images will soon be commonplace, if technology developed by German company SeeReal lives up to its promise.

The technology promises revolutionary advances in everything from gaming to medical applications, and 3D has the potential to trigger the development of new kinds of user interface.

SeeReal used the Society for International Display (SID) show held in California in May to show off a prototype it has been working on for four years. The company said that its Tracked Viewing Window technology overcomes the two main obstacles that have prevented 3D displays becoming an affordable mainstream technology.

Creating three-dimensional moving images, which can be viewed from a range of angles, has until now required displays with a resolution equivalent to 250,000 times that of HD TV. The processing power and data throughput needed to create holographic images that move in real time has typically required super-computers.

However, SeeReal has said that it has managed to reduce the processing overhead and display



resolution requirements by eliminating the creation of data that is not typically noticed by the viewer of a holographic image.

A spokesman said: "Active optical elements can be used to precisely redirect light to appropriate Viewing Window positions. Now the diffraction angle must only be sufficiently large to extend a small Viewing Window. This allows much larger display pitch, typically 25-50 micron for a 40in display."

SeeReal says that it is talking to partners to license its technology for commercial use.

Computers should 'forget your data'

Storing ever more information, especially personal data, has been the driving force behind many computer businesses. Companies such as Google and Amazon have built powerful businesses by using data and targeting individuals with customised adverts based on their search and purchasing histories.

However, a Harvard academic, Viktor Mayer-Schoenberger, is warning that far from assembling more information about people, computers should be designed to forget information. At stake are our privacy and the consequences of data overload, in which trivial minutiae obscure more profound truths.

"Living in a world in which our lives are being recorded and records are being retained, in which societal forgetting has been replaced by precise remembering, will profoundly influence how we view our world and how we behave in it," wrote Mayer-Schoenberger in a recently published research paper.

When everything we do is recorded for posterity, he argued, people respond by becoming increasingly resistant to divulging accurate information about themselves and attempt to construct elaborate smokescreens around their day-to-day activities. This kind of modified behaviour is already common; how many people give their real date of birth or postcode when they register to get free content from a news site, for example?

Mayer-Schoenberger advocates the use of software that deletes data 'memories' stored on servers, to mimic the way that human and collective societal memories fade. He also proposes that lawmakers address the exponential growth in personal data being stored by corporations.

"It does not overly burden entire business sectors, yet will change how we perceive privacy in our society," he wrote. "My aim is to shift the default back from retaining forever to deleting after a certain time."

Encyclopedia to put every species online

An ambitious £50 million project to create a web-based encyclopedia cataloguing every known animal and plant species has been launched using grants from two US philanthropic organisations.



▲ The Encyclopedia of Life will be free for anyone to use

The Encyclopedia of Life will be free for anyone to use. Its backers, which include the Natural History Museum and the Royal Botanic Garden in Kew, intend to create a valuable resource that can be accessed by conservationists, governments worried about the effects of global warming and pollution on species, schools or anyone interested in animals and plants.

Although it will be overseen by a full-time team of around 30 staff, the project will follow the successful example of Wikipedia by encouraging contributions from scientists and amateurs alike.

"The Encyclopedia of Life plans to create an entry for every named species. At the moment that's 1.8 million," said James Edwards, the executive director of the project, which is expected to take at least 10 years to complete.

"Our goal is to create a constantly evolving encyclopedia that lives on the internet; to transform the science of biology, and inspire a new generation of scientists, by aggregating all known data about every living species; and ultimately, to increase our collective understanding of life on Earth, and safeguard the richest possible spectrum of biodiversity," added a spokesman.

Some demonstration pages have already been posted at www.eol.org.